BOOK REVIEWS

LABORATORY TECHNIQUE IN BIOLOGY AND MEDICINE. By E. V. Cowdry, Professor of Anatomy, Washington University, and Director of Research, The Barnard Free Skin and Cancer Hospital, St. Louis, Missouri. Pp. 269. Williams and Wilkins Company, Mt. Royal and Guilford Avenues, Baltimore 2, Maryland, 1948. Price, $4.00.

Under the present title, this book is the second revised edition of the author's former book entitled *Microscopic Technique*. It is an alphabetically arranged compilation of qualitative and quantitative micro-tests and techniques applicable to tissues, organs, body fluids, unicellular organisms, bacteria, etc., useful in routine diagnosis, physiological research, microscopic study, toxicological examinations and other laboratory work. No detail has been overlooked. The techniques described are of proved value and most of these were revised by their originators. Sufficient detail is given to enable an experienced person to proceed without difficulty. Many references to original papers for further details are included. When micro-technique is not applicable, other procedures are suggested, for instance, use of a spectrophotometer or spectrograph, etc. Outstanding is a lengthy and detailed description of Knisely's quartz rod technique for examining living organs *in vitro*, especially the capillary circulation, a valuable method in a wide variety of physiological problems. All in all this edition is remarkably complete in content and scope. It is a must for hospital technicians, researchers in biological and medical sciences and clinical pathologists.

ENCYCLOPEDIA OF MEDICAL SOURCES. By Emerson Crosby Kelly, M.D., F.A.C.S., Associate Professor of Surgery, Albany Medical College, attending surgeon, Albany Hospital Editor, Medical Classics. The Williams & Wilkins Company, 1948. Price, $7.50.

The author has made available an informative volume not only for those who are interested in medical history, but also for those who desire precision in regard to medical eponyms. At the same time he has compiled a magnificent bibliography of the important contributions to medicine and surgery for those who wish to write papers for the clinician. The volume constitutes an indispensable repository of fundamental bibliographic information and makes possible for writers the saving of untold hours of library research. The author puts upon a sound historical and bibliographic basis the true but often falsely quoted works of the great clinicians, whose original and pertinent references are made easily available. For those who find the dictionary enjoyable reading, "The Encyclopedia of Medical Sources" will offer similar entertainment although it was originally intended as a source book.

PROCEDURE IN EXAMINATION OF THE LUNGS. Kraetzer, Third Edition, Oxford Medical Publications. 1947. $3.50.

This book has long been a most valuable aid to the student in becoming oriented on the chest, something which many graduates have never learned. It has also served to emphasize a phase of examination which there has been a tendency to ignore since the more recent refinements of roentgenography and the emphasis on its peculiar value in the diagnosis of early tuberculosis. We have heard not a few papers and discussions minimizing or ignoring the physical examination of the chest in this connection, overlooking the fact that there are a number of conditions in which the x-ray gives us no information. In his enthusiasm for mass surveys the tuberculosis clinician is at times prone to lose sight of the fact that the purpose of the examination is to detect any pathological condition in the patient's chest, not simply whether he has tuberculosis or not. Bronchitis, bronchiolitis, asthma and beginning bronchostenosis from tuberculosis or other cause are only a few of the conditions whose recognition is not helped by the x-ray.

It is, however, disappointing to find some of the omissions of the former editions carried forward into this one. Failure to mention the heart in the chapters dealing with inspection and palpation is one of the minor but obvious deficiencies. The continuation of some outmoded findings such as Kroenig's isthmus is also unfortunate.

The discussion of the causes of spontaneous pneumothorax is in need of revision.

Dr. Segal contributes a very valuable appendix in an attempt to bring the book up to date.

It is obvious that the addition of an appendix, however good in itself, is not sufficient justification for calling this a new edition. It is to be regretted that a firm with the standing of the Oxford Medical Publications should be guilty of such a breach of faith with its clientele, a practice which is bound to react unfavorably on its reputation in regard to future publications.

THE LUNGS. William Snow Miller, M.D., F.C.D. Sc. Second Edition. Charles C. Thomas, Springfield, Ill. $7.50.

Ever since the first edition of this book appeared in 1937 it has been the vade mecum for those who would understand the physiology and pathology of the lungs. Those whose small individual financial contributions made possible the summarizing of the lifetime work of the author are entitled to feel a degree of pride in the presentation which has been achieved.

Within the limits of a book of this size it has not been possible to incorporate all his work. This edition, which contains an added number of color plates, black and white illustrations and manuscripts, is to that extent an improvement on its predecessor. It is hoped that still more may be included in a future revision.

The outstanding quality of the color plates of the first edition has been well maintained in the second.

PRACTICAL METHODS IN BIOCHEMISTRY. Fifth Edition. F. C. Koch and Martin E. Hanke, University of Chicago, pp. 419, ix prelims. Williams and Wilkins Co., Baltimore, 1948. Price, $3.00.

This book is a happy compromise between one widely used laboratory guide of 1,321 closely printed pages and another of 149 pages. Since the three books endeavor to serve the same end and, indeed, carry virtually the same title, somewhat of a comparison may be worth while. Both the "Fat" and the "Thin" contain sections on Milk and Ephithelial and Connective Tissues. Koch and Hanke chose to omit these, and wisely so, in the judgment of the reviewer; the experiments usually performed on these materials are dull, uninformative, and seldom illustrate any point of fundamental importance. "Fat" contains a good section on enzymes which, because of its emphasis on general enzyme biochemistry, is a good prelude to the chapters on digestion and might well be included in other good laboratory manuals in biochemistry. Koch and Hanke included, of course, the usual chapters on digestion and did so quite concisely in about half the space. The authors devoted 145 pages to blood and urine

in contrast to the 73 pages in "Thin" and the 392 pages in "Fat." Koch and Hanke's book is a straightforward, practical laboratory manual, while "Fat" is, admittedly, a substantial reference book as well. In the reviewer's opinion, Koch and Hanke have turned out a thoroughly good manual in which the subject matter is well balanced as to division of space. The book has run through four previous editions and, hence, is almost free of typographical errors (*steriod* on page 347 and *untable* on page 65). It contains two excellent chapters, totalling 50 pages of experiments, on Vitamins and Microbiological Assays. These are very timely subjects and, as far as the reviewer knows, are not to be found in any other laboratory book intended for the introductory student of biochemistry.

The appendix describes in greater detail than does its fat companion the preparation of the numerous reagents required for laboratory instruction in biochemistry. It is unfortunate that it does not contain, as does the larger work, a section on the maintenance of laboratory animals for experiments in nutrition. Such material reminds the student of our indebtedness to the rat, the guinea pig, etc. and indicates to those who enter upon the study of medicine the fundamental importance of animal experimentation in medical research.

The book is not without its other faults but to the reviewer, they are comparatively few and, in some cases, trivial. As in almost all laboratory manuals an experiment is to be found on the Lobry de Bruyn and van Ekenstein rearrangement. Fortunately, the authors do not suggest that this is of any biological significance; to minimize the possibility of concluding, by implication, that fructose and mannose are by this means converted to glucose, in vivo, it would be well in future editions to mention the role of phosphorylation in effecting the fructose-to-glucose conversion.

In the determination of nitrogen in blood and urine, emphasis is given to direct Nesslerization methods. With sufficient practice, and when employed by experienced technicians, these methods may be used with confidence. The reviewer, however, has seldom found that they were satisfactory for the usual large class of medical students: a gross precipitate or a troublesome opacity frequently develop on Nesslerization. Since rapid, accurate, semi-micro, Kjeldahl and steam-distillation methods are readily available, these are to be preferred, in the reviewer's opinion, for the determination of urea, total nitrogen, and non-protein nitrogen.

In many instances the authors offer a choice of methods. They do so usually without appraisal and without giving to the reader the benefit of their years of experience in biochemistry. This fault is not peculiar to the book by Koch and Hanke, for seldom indeed does it happen that analytical methods are presented in laboratory manuals on biochemistry according to any rating system.

The text contains a few curious constructions which may disturb a grammarian insistent upon purity of syntax. For example, on page 39, should not the phrase "dissolve this in a test tube in about 6 cc. 95 per cent alcohol" be changed to read "dissolve this in about 6 cc. of 95 per cent alcohol contained in a test tube"? On page 115 we read "the pH's appear too acid." Surely this should be "the pH's appear too low" or "the solutions appear too acid."

"Saccharose" is used throughout the text in place of "sucrose" except on page 143, where, for no apparent reason, the much more popular "sucrose" comes into its own.

There are many needless inconsistencies in the printing of chemical names which suggest the need of more careful editing in future editions:

On page 53 we find "para-dimethyl-amino-benzaldehyde" but on page 373 "dimethyl-amino-benzaldehyde," "p-dimethyl-amino-benzaldehyde" and "p-dimethylamino-benzaldehyde"—all three versions within the space of six lines. Both "chromotropic acid" and "chromotrophic acid" are to be found on page 79. The adjective "colorimetric" is singled out, without apparent reason, for capitalization on page 81. Alphanaphthol and α-naphthol appear together on page 382, and tyrosine and tyrosin on page 407.

All in all this is an excellent book and will be found useful by clinical technicians, research assistants, and medical students.

Professor Koch passed away while this present edition was in press. The book testifies to his many years of work in biochemistry, to his excellence as a teacher, and to his insistence upon precision and meticulous care in laboratory technique.

OCCUPATIONAL MEDICINE AND INDUSTRIAL HYGIENE. By Rutherford T. Johnstone, A.B., M.D. Consultant in Industrial Health; Lecturer at the University of California, Los Angeles. Formerly Assistant Professor of Medicine, University of Pittsburgh School of Medicine. With One Hundred Seventeen Illustrations, Seven in Color. The C. V. Mosby Company. 1948.

As mechanization of our civilization has progressed, there has been a growing need for books describing and explaining the diseases arising from occupational exposures. Expanding knowledge of chemistry and physics has made possible the economical preparation of new materials and of new agents for processing familiar materials. Even in the home, strange compounds are becoming common: detergents are often not soaps, dishes are often not crockery, cleansing solvents not gasoline, adhesives not glue. In industry, not only manufacturing, but also agriculture and the service industries, the introduction of unfamiliar compounds is even more pronounced. Most of these novel materials are harmless, and in many instances they have been tested adequately to demonstrate this, but the practicing physician needs a better way of finding out which ones are potentially dangerous than by writing to *Queries and Minor Notes* of the J.A.M.A.

Moreover, California industrialists are becoming increasingly aware of the potential benefits of in-plant medical services. One factor retarding the greater utilization of medical knowledge by industry is the lack of preparation by physicians to take an effective, leading part in this endeavor.

In any attempt to cover this broad and changing field, the breadth and variety of topics to be considered is formidable. Previous authors have dealt with the problem by editing symposia or by very extensive quotations from various sources. This has almost inevitably led to imperfect balance of emphasis and lack of integration of the several contributions. Dr. Johnstone has written his own book, with the good result that each of its parts is well related to the whole. He has been free with his use of quotations, but he has made them part of his own work by discriminating choices and critical evaluation. The outcome is the best book ever written in this field. It is not a mere revision of Dr. Johnstone's previous work, *Occupational Diseases;* while retaining the best features of that book and bringing the material up to date, he has made a new and more effective approach to the problem of engendering understanding of occupational disease through more detailed and clearer explanations of the underlying processes by which noxious materials are taken into the body and absorbed, and the physiological and anatomical changes which result. He has added a section on industrial hygiene.

One of the best things about this work is the forthright, positive attitude of the author. He is not one to hedge about his opinions with ambiguous qualifications. Consequently, there are a number of points about which there is room for disagreement, but all the major premises are sound, and it is refreshing to read a medical text which reflects something of the author's personality.